

ABSTRACT OF THE DISCLOSURE

When a user steps on a footswitch, high-frequency output power is delivered. A control circuit included in a diathermic power supply calculates the impedance  $Z_{Sn}$  that is offered by a living tissue immediately after delivery of high-frequency output power is started during the  $n$ -th delivery period. The control circuit also calculates the impedance  $Z_{En}$  that is offered thereby immediately before delivery of high-frequency output power is discontinued with elapse of predetermined time. The control circuit then discontinues delivery of high-frequency output power for the predetermined time, and calculates a difference  $\Delta Z_n$  between the impedances. When the difference meets a predetermined condition that implies coagulation or when the number of times of delivery reaches a predetermined value, the control circuit discontinues delivery of high-frequency output power.